CLAIMS

What is claimed is:

1. A wheel assembly comprising:

a wheel mounted to a hub; and

a sensor to selectively generate a signal indicative of relative movement between said wheel and said hub.

2. The assembly as recited in claim 1, further comprising a transmitter and a controller, said transmitter communicating said signal from said sensor to said controller.

3. The assembly as recited in claim 2, further comprising a warning device for conveying information indicative of relative movement between said wheel and said hub, said display in communication with said controller.

4. The assembly as recited in claim 1, wherein said sensor is mounted to said hub.

5. The assembly as recited in claim 4, wherein said hub includes an opening, said sensor mounted within said opening.

6. The assembly as recited in claim 1, wherein said sensor further comprises a pointer engaged with said wheel.

7. The assembly as recited in claim 6, wherein said pointer moves in response to relative movement between said hub and said wheel.

8. The assembly as recited in claim 7, wherein said pointer is attached to a signal generator, movement of said pointer in response to movement of said wheel actuates said signal generator.

9. The assembly as recited in claim 8, wherein said signal generator comprises a piezo-ceramic material generating an electric current in response to movement of said pointer.

10. The assembly as recited in claim 7, including a biasing member supporting said point, said biasing member biasing said point toward said hub.

11. The assembly as recited in claim 1, wherein said sensor comprises an optical motion detector.

12. The assembly as recited in claim 11, wherein said sensor comprises a light emitting portion and a light-receiving portion.

13. A loose wheel detection assembly for a wheel mounted to a hub comprising:

a sensor to selectively generate a signal indicative of relative movement between the hub and the wheel.

14. The assembly as recited in claim 13, wherein said sensor includes a pointer engaged to said wheel, said pointer movable in response to relative movement between the wheel and the hub.

15. The assembly as recited in claim 14, further comprising a generator responsive to movement of said pointer.

16. The assembly as recited in claim 15, wherein said generator is a piezo-ceramic member generating an electrical current proportional to movement of said pointer.

17. The assembly as recited in claim 13, further comprising a transmitter for transmitting information indicative of movement between said wheel and said hub.

18. The assembly as recited in claim 13, wherein said pointer comprises a cylindrical member having an end fixed to said wheel.

19. The assembly as recited in claim 13, wherein said sensor comprises an optical motion detector.

20. A method of detecting a loose wheel on a vehicle, said method comprising the steps of:

a) detecting relative movement between a wheel and a hub; and

b) indicating a loose wheel in response to a predetermined amount of relative movement between said wheel and hub;

21. The method as recited in claim 20, comprising transmitting information indicative of relative movement between said hub and said wheel to a controller.

22. The method as recited in claim 20, wherein said step a) comprises contacting said wheel with a pointer and said step b) comprises detecting deflection of said pointer.

23. The method as recited in claim 21, comprising transmitting an electrical signal proportional to deflection of said pointer.

24. The method as recited in claim 20, wherein step a) comprises detecting movement between said wheel with an optical motion detector.